

A New Record of the Gobiid Fish *Istigobius hoshinonis* from Korea

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韓國産 망둑어科 魚類 1未記錄種 *Istigobius hoshinonis*

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摘 要

1986年 8月 2日 濟州道 翰林邑에서 採集한 망둑어科 魚類 1個體가 韓國 未記錄種인 *Istigobius hoshinonis*로 同定되었기에 이를 記載하였다. 本 種은 가슴지느러미에 遊離鰭條가 없고 등지느러미전방 비늘이 12個 以上, 橫列鱗數가 7~9個, 鰓과 鰓蓋部에 비늘이 없는점 등에서 同一屬의 다른 種들과 잘 區分된다. 本 種의 韓國名은 '비단망둑'이라 命名한다.

Key words: *Istigobius hoshinonis*, gobiid fish, taxonomy, Korea.

INTRODUCTION

Istigobius hoshinonis was originally described by Tanaka (1917) as *Rhinogobius hoshinonis* on the basis of one specimen obtained from Kunihiro, Wakayama Prefecture, Japan. This species was known to occur from the Pacific coast of Japan to Hong Kong (Matsubara, 1955; Hayashi *et al.*, 1981). Its presence in Korean waters was predictable. In the course of studying the coastal fish fauna from Korea, one specimen of the gobiid fish collected from Hanrim-up, Cheju-do in August 2, 1986, was recognized as unrecorded species, *Istigobius hoshinonis* (Tanaka) in Korea. The comparison of this specimen is made in the original description and additional morphological informations (Tanaka, 1917; Akihito *et al.*, 1984; Murdy and Hoese,

1985). Methods of count and measurement follow those given by Hubbs and Lagler (1964), except that lateral scales are counted in a series from the scales at the posterior end of the upper part of the gill membrane to the middle scale on the base of the caudal fin. Cephalic sensory pore and cutaneous papilla systems were observed after staining by Suminol cyanine. Drawing was made with a zoom stereomicroscope (Olympus SZ-Tr) and camera lucida. Terminology follows Akihito *et al.* (1984).

***Istigobius hoshinonis* (Tanaka, 1917) (New Korean name: Pidan-mang-dug, 비단망둑) (Fig. 1)**

Rhinogobius hoshinonis Tanaka, 1917, p. 226.

Gobius ornatus hoshinonis Tomiyama, 1936, p. 73, fig. 25.

Acentrogobius hoshinonis Matsubara, 1955, p. 831.

Istigobius hoshinonis Murdy *et* Hoese, 1985, pp. 13-16, pl. 1, figs. 3-7.

Material examined: One specimen, 49.1mm in standard length (SL), Ongpo-ri, Hanrim-*up*, Pukcheju-gun, Cheju-do, August 2, 1986.

Description: Counts and measurements are shown in Table 1. Body short, anteriorly a little cylindrical, caudal peduncle compressed. Head small, snout overhanging the upper lip. Eyes close together and interorbital space narrow. Anterior nostril with a tube. No barbels on head. Cheeks and operculae are without scales. Predorsal scales are cycloid, body scales are ctenoid. Gill openings run the extent of the pectoral base. Lower jaw has a large recurved canine at each angle. Ground color in formalin uniformly yellow-brown with 5 large square-like blotches along mid-lateral portion, the posteriormost spot at base of caudal fin; small dusky spots situated consecutively along sides almost forming 2 longitudinal lines bordering the 5 larger spots; small, dusky spots are present on 1-3 rows of scales from the dorsal body contour; prominent dusky longitudinal line after eye; 2 dusky blotches on pectoral base, uppermost 1 spreading out onto fin rays; large, irregular dusky blotch on cheek; 2 small blotches below eye; dorsal fins with 3 longitudinal dark strips; upper two-thirds caudal fin with 5 indistinct dark strips; anal fin with one marginal strip. The sensory canals and papillae on head given in fig. 2: Anterior oculoscapular canal with openings B', C (single), D(single), E, F, G, H'; posterior oculoscapular canal with K', L'; preopercular canal with M', N, O'.

Sexual dimorphism: The black spot found distally on the membranes between dorsal spines IV-VI in male. Urogenital papilla distinct: In males, the genital papilla is long and flat, wide at the base, and tapers to a rounded tip; in females, the genital papilla is short and bulbous, and uniform in thickness (Murdy and Hoese, 1985).

Distribution and Habitat: *Istigobius hoshinonis* was collected from Cheju-do of Korean Peninsula. And this species was known to occur from the southern Japan and Hong Kong (Matsubara, 1955). This species inhabits sandy and muddy bottoms in shallow water. Shiobara and Suzuki (1983) noted the life history

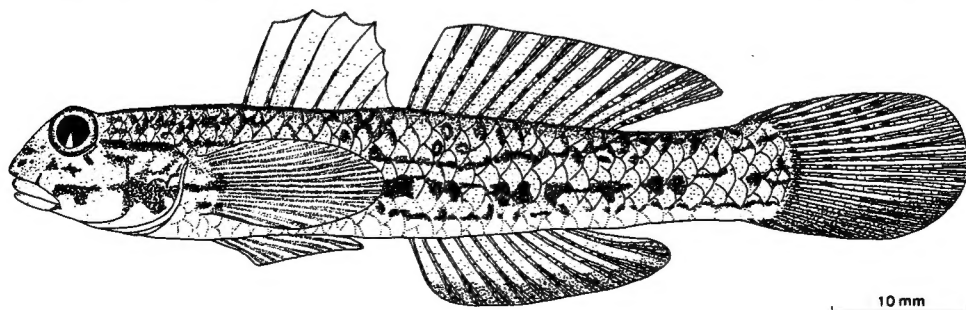
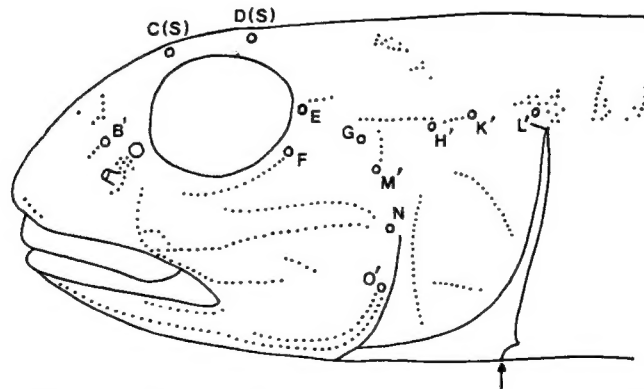


Fig. 1. *Istigobius hoshinonis* (Tanaka)

Table 1. Morphometric measurements and counts of *Istigobius hoshinonis* collected from Ongpo-ri, Hanrim-ŭp, Pukcheju-gun, Cheju-do, Korea in August 2, 1986

Characters	Present study	Type specimen (Tanaka, 1917)
Total length (mm)	60.5	100.0
Standard length	49.1	—
In % of standard length		
Body depth	17.7	14.8
Head length	28.3	29.2
Caudal peduncle length	22.0	—
Length of predorsal	35.6	—
Length of prepectoral	30.5	—
Length of preventral	31.2	—
Length of preanal	55.8	—
Distance of ventral to anal	26.9	—
In % of head length		
Snout length	30.2	25.0
Eye diameter	25.9	25.0
Interorbital width	7.2	8.9
Caudal peduncle depth	43.1	38.1
Dorsal fin rays	VI-I, 11	VI-12
Pectoral fin rays	18	17
Pelvic fin rays	I, 5	I, 5
Lateral scales	29	28
Transverse scales	8	12
Predorsal scales	12	—

**Fig. 2.** Schematic diagram of the sensory canal pore and pit organs of *Istigobius hoshinonis*. B' to H': anterior oculoscapular canal, K'L': posterior oculoscapular canal, M' to O': preopercular canal. (S): single canal pore. Letters with an apostrophe indicate pores at the canal. Arrow indicates anterior end of gill opening.

and reproductive behavior of this species in Japan.

Remark: In the original description, Tanaka (1917) recorded *Rhinogobius hoshinonis* for a 100mm specimen (TL) collected at Kunihiro, Wakayama Prefecture, Japan. Matsubara (1955) transferred this genus from *Rhinogobius* to *Acentrogobius*. Hoese and Winterbottom (1979) described *Istigobius* as a genus of Gobiidae. Species of *Istigobius* have been most frequently misassigned in recent times to *Acentrogobius*. *Istigobius* differs from *Acentrogobius* in having an inferior mouth with overhanging snout and a broad isthmus scaled anteriorly to a point below the preoperculum or eye, which are agreed with this species. Though the counts and measurements in the present specimen differs slightly from the original description, it is identified as *I. hoshinonis* based on following characters: the number of dorsal fin rays and anal fin rays, the number of transverse scales and predorsal scales, the color patterns (Akihito *et al.*, 1984; Murdy and Hoese, 1985). Although it is necessary to confirm with further study, a Korean name 'Pidan-mang-dug' at Hanrim-ŭp, Cheju-do, on August 2, 1986. This is the first definitive record of the species..

ABSTRACT

A gobiid fish, *Istigobius hoshinonis* (Tanaka) is described from one specimen collected at Hanrim-ŭp, Cheju-do, on August 2, 1986. This is the first definitive record of the species in Korean waters. This species is distinguish from its congeners by the combination of the following characters: uppermost pectoral fin ray unbranched, 12 or more predorsal scales, 7-9 transverse scales and no scales on cheek and operculum. 'Pidan-mang-dug' is proposed as Korean name of this species.

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REFERENCES

- Akihito, Prince, M. Hayashi and T. Yoshino, 1984. Suborder Gobioidi. In H. Masuda, K. Amaoka, C. Araga, T. Ueno and T. Yoshino eds.; The fishes of the Japanese Archipelago. Tokai Univ. Press. Tokyo, pp. 236-289, pls. 235-258.
- Hayashi, M., R. Arai, and K. Matsuura, 1981. Notes on a goby, *Acentrogobius hoshinonis*, from the Izu Peninsula, Central Japan. Mem. Nat. Sci. Mus., **14**: 143-149.
- Hoese, D. F. and R. Winterbottom, 1979. A new species of *Lioteres* (Pisces, Gobiidae) from Kwazulu, with a revised checklist of South African gobies and comments on the generic relationships and endemism of western Indian Ocean Gobioids. Roy. Ont. Mus., Life Sci. Occ. Pap., **31**: 1-13.
- Hubbs, C. L. and K. F. Lagler, 1964. Fishes of the Great Lakes Region. Ann. Arbor Univ. Mich. Press, pp. 19-27.
- Matsubara, K., 1955. Fish morphology and hierarchy. Ishizaki Shoten. Tokyo., vols. **1-3**, 1605 pp., 135 pls. (In Japanese).

- Murdy, E. O. and D. F. Hoese, 1985. Revision of the gobiid fish genus *Istigobius*, Indo-Pacific Fishes. Bernice Pauahi Bishop Museum. Honolulu, Hawaii., **4**: 1-41.
- Shiobara, Y. and K. Suzuki, 1983. Life history of two gobioides *Istigobius hoshinonis* (Tanaka) and *I. campbelli* (Jordan and Snyder), under natural and rearing conditions. Jour. Fac. Mar. Sci. Tech., Tokai Univ., **16**: 193-205.
- Tanaka, S., 1917. Three new species from Japan. Zool. Mag., Zool. Soc. Jap., **29**: 225-226 (In Japanese).
- Tomiyama, I., 1936. Gobiidae of Japan. Jap. J. Zool., **7**: 37-112.

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